



**GOVERNMENT OF INDIA: MINISTRY OF RAILWAYS
RESEARCH DESIGNS & STANDARDS ORGANISATION
MINISTRY OF RAILWAYS
MANAK NAGAR, LUCKNOW – 226 011.**

EXPRESSION OF INTEREST

EOI No. CARR-SS-02-2016

RDSO is the sole Research Design and Standards Organization of Indian Railways, dedicated to create & adopt technology solutions for Indian Railways. Carriage Directorate of RDSO is dealing with design and development of coach items.

RDSO is interested in developing Specification for Natural and Artificial Fibre Thermoset Composite (NAFTC) Sheets for Roof Panelling of Indian Railways Passanger Coaches. The functional requirements of the desired specification and Proforma for response have been enclosed.

Firms/Organizations who have enough experience and capabilities in the field and have ISO certificate and are interested in developing and supply of said item are requested to see the details on the RDSO website <http://www.rdsso.indianrailways.gov.in> → Tender → EOI or contact Director/SS/Carriage/RDSO/Lucknow during office hours on any working day for further details.

The interested firms/organizations are requested to submit details in the prescribed format attached herewith on or before 29-02-2016 to the address mentioned below.

Contact Address:

Director (SS),

Room No: 14, Carriage Directorate, Annexe-I Building,

Research Designs & Standards Organization (RDSO), Ministry of Railways,

Manak Nagar, Lucknow – 226 011, Uttar Pradesh, India

BSNL Ph. No. 0522 – 2465708, BSNL Fax No. 0522 – 2450679, 0522 – 2465708

Email address: dirssrdsso@gmail.com

Enclosure: 1. Proforma for response
2. Functional Requirements.

FORMAT FOR LETTER OF RESPONSE

Respondents Ref No.:

Date:

Executive Director (Carriage)
Room No: 2
Carriage Directorate, Annexe I Building
Research Designs & Standards Organization
Ministry of Railways
Manak Nagar
Lucknow – 226 011
Uttar Pradesh, India

Dear Sir,

Subject: RESPONSE TO – EOI FOR PARTICIPATION _____

1. We, the undersigned, offer the following information in response to the Expression of Interest sought by you vide your Notification No._____, dated _____.
2. We are duly authorized to represent and act on behalf of _____ (hereinafter the “respondent”)
3. We have examined and have no reservations to the EOI Document including Addenda No(s) _____.
4. We are attaching with this letter, the copies of original documents defining: -
 - a) the respondent’s legal status;
 - b) its principal place of business;
 - c) its place of incorporation (if respondents are corporations); or its place of registration (if respondents are cooperative institutions, partnerships or individually owned firms);
 - d) Self certified financial statements of Last three years, clearly indicating the financial turn over and net worth.
 - e) Copies of any market research, business studies, feasibility reports and the like sponsored by the respondent, relevant to the project under consideration
5. We shall assist MoR and/or its authorized representatives to obtain further clarification from us, if needed.
 - a) RDSO and/or its authorized representatives may contact the following nodal persons for further information on any aspects of the Response:

S. No.	Contact Name	Address	Telephone	E Mail
1				
2				

6. This application is made in the full understanding that:

- a) Information furnished in response to EOI shall be used confidentially by RDSO for the purpose of development of the project.
- b) RDSO reserves the right to reject or accept any or all applications, cancel the EOI and subsequent bidding process without any obligation to inform the respondent about the grounds of same.
- c) We confirm that we are interested in participating in development of the project.

7. We certify that our turnover and net worth in the last three years is as under:

Financial Year	Turn over	Net worth

8. In response to the EOI we hereby submit the following additional details annexed to this application.

- 8.1. Details of various items being manufactured/consultancy undertaken.
- 8.2. Details of customer(s) and supplies made in the field of item under EOI.
- 8.3. Experience and expertise for the items proposed in EOI.
- 8.4. Details of man-power with their qualification and experience.
- 8.5. Detailed proposal for items proposed in EOI including alternative proposal, if any.
- 8.6. Details of Intellectual Property Rights (IPR) held, patent filed/held and MoU/agreement signed.
- 8.7. Details of ISO certification
- 8.8. undertakings as per Annexure – A

9. The undersigned declare that the statements made and the information provided in the duly completed application are complete, true, and correct in every detail. We also understand that in the event of any information furnished by us being found later on to be incorrect or any material information having been suppressed, RDSO may delete our name from the list of qualified Respondents. We further understand that RDSO will give first preference to the applicants considered relevant for the purpose.

10. Our response is valid till (date in figures and words): _____

Yours sincerely,

(Sign)

NAME

In the Capacity of

Duly authorized to sign the
response for and on behalf of

Date

Annexure – A

(To be taken on non-judicial stamp paper of appropriate value as applicable in the respective state and duly notarised & witnessed)

UNDERTAKING

I, son of aged about Years resident of do hereby solemnly affirm as under:-

1. That the deponent is the Authorised signatory of *(Name of the Sole Proprietorship Concern/ Partnership Firm/ Registered Company/ Joint Venture)*.
2. That the deponent declares on behalf of *(Name of the Sole Proprietorship Concern/ Partnership Firm/ Registered Company/ Joint Venture)* that:
 - a) In regard to matters relating to the security and integrity of the country, no charge sheet has been filed by an agency of the Government / conviction by a Court of Law for an offence committed by the -----(name of the entity) or by any sister concern of the -----(name of the entity) would result in disqualification.
 - b) In regard to matters other than the security and integrity of the country, -----(name of the entity) has not been convicted by a Court of Law or indicted / passed any adverse order by a regulatory authority against it or it's any sister concern which relates to a grave offence, or would constitute disqualification. Grave offence is defined to be of such a nature that it outrages the moral sense of the community.

DEPONENT

VERIFICATION

I declare that the contents of para 1 to 2 above are true as per my knowledge and nothing has been hidden.

DEPONENT

FUNCTIONAL REQUIREMENTS OF NATURAL AND ARTIFICIAL FIBRE THERMOSET COMPOSITE (NAFTC) SHEETS FOR ROOF PANELLING OF INDIAN RAILWAYS PASSANGER COACHES

1.0 FUNCTIONAL REQUIREMENTS:

The Natural and Artificial Fibre Thermoset Composite (NAFTC) Sheets should have following functional requirements: -

1. Fire retardant properties as per existing RDSO standards.
2. Injury free and no sharp edges or sharp corners etc.
3. Ease in work and should not result skin itching etc. on body of workers while drilling hole in it.
4. No painting to be required.
5. Normally it should not require replacement and should go along with life of coach.
6. It should properly joint so that there is no visible unpleasant gap length.
7. It should have flexibility to take contour of panel where needed.
8. It should be aesthetically pleasant.

These NAFTC Sheets should work satisfactorily under the following operating conditions and properties of NAFTC Sheet for Indian Railway coaches:

1.1 COACH DYNAMICS:

Natural and Artificial Fibre Thermoset Composite (NAFTC) Sheets for Roof Panelling of Indian Railways Passanger Coaches should provide adequate strength during the vibrations and shocks normally encountered in service as indicated below:

- | | | |
|------|-----------------------------------|------|
| i) | Maximum vertical acceleration | 1.0g |
| ii) | Maximum longitudinal acceleration | 3.0g |
| iii) | Maximum transverse acceleration | 2.0g |

The vibrations are of sine wave form and the frequency vibration is between 1 Hz to 50 Hz.

The amplitude 'a' expressed in millimeters is given as a function of f, by equations
 $a = 25/f$ for values of f from 1 Hz to 10 Hz.

$a = 250/f^2$ for values of f exceeding 10Hz and up to 50 Hz.

- 1.2** In the direction corresponding to the longitudinal movement of the vehicle, the Roof Panelling material is subjected for 2 min. to 50 Hz Vibrations of such a value that the maximum acceleration is equal to 3g.

1.3 COACH-BODY DISPLACEMENT ENCOUNTERED UNDER DYNAMIC CONDITIONS.

- | | | |
|------|------------------------------------|--------------|
| i) | Vertically- | ± 100 mm |
| ii) | laterally - | ± 55 mm |
| iii) | longitudinally- | ± 10 mm |
| iv) | bogie rotation about center pivot- | $\pm 4^0$ |

1.4 Ambient Conditions

- (i) Ambient temperature : -4° C to 50° C
- Altitude : Sea level to 2500m
- Max. temperature under Sun : 70° C
- Relative humidity : 40% to 95%
- (ii) The rainfall is fairly heavy.
- (iii) During dry weather, the atmosphere is likely to be dusty.
- (iv) Temperature variations can be quite high in the same journey or short period of time.
- (v) Coaches operate in coastal areas with continued exposure to salt laden air.

1.5 Coach Inside Condition:

Inside condition of the coach may consider as under:

The ambient conditions may be similar as mentioned under para 1.4 above for Non-air-conditioned coaches. However in summer day the value of upper range of the temperature may go up. For AC coaches temperature may be maintained.

2.0 Properties required for Natural and Artificial Fibre Thermoset Composite (NAFTC) Sheets for Roof Panelling of Indian Railways Passanger Coaches.

Tests shall be conducted from the finished product, the methods for the respective tests may be indicated and shall conform to the specified requirements. The respondents are requested to provide following details:

S. N	Properties	Required value	Test Method
1	Density (gm/cm ³)		
2	Tensile strength (MPa) both along the length and width		
3	Breaking strength (Kg) both along the length and width		
4	Drop impact test		
5	Flexibility		
6	Water absorption (%)		
7	Resistance to spread of flame		
8	Deterioration of visibility due to smoke		
9	Limiting Oxygen Index		
10	Toxicity		
11	Heat Release Rate (MARHE i.e. Maximum Average Rate of Heat Emission in KW/m ²) as specified in EN 45545-2:2013		

- 3.0 If any other parameter needs to be evaluated may also be mentioned. Also the cost implication of the material may be submitted.